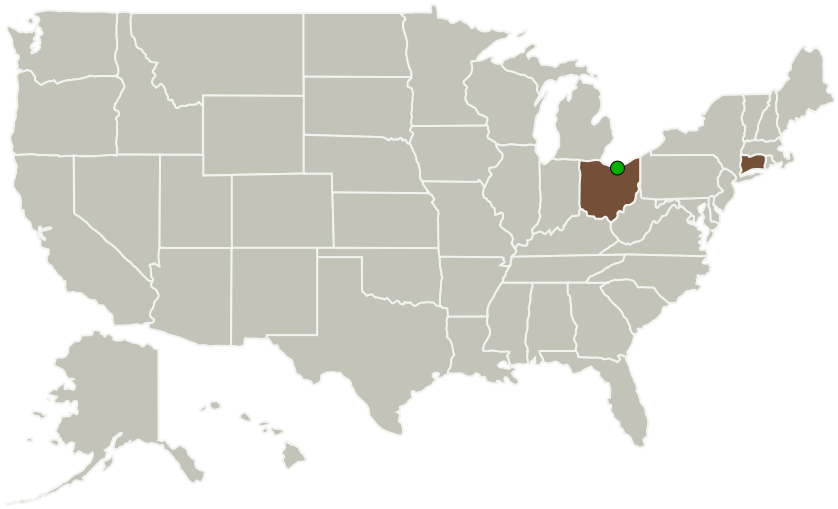
High Temperature Fiberoptic Thermal Imaging System, Phase I

Completed Technology Project (2014 - 2014)

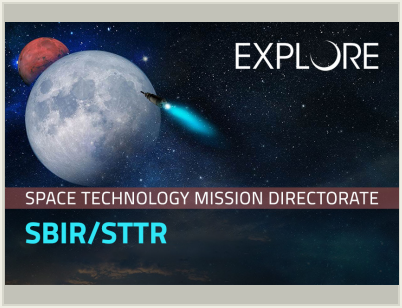
Project Introduction

The proposed Phase 1 program will fabricate and demonstrate a small diameter single fiber endoscope that can perform high temperature thermal imaging in a jet engine turbine and combustor. Task work will design, fabricate, calibrate, and test the single fiber thermal imaging system in a 1000 C environment. Equipment needs will be documented in detail and system characteristics such as spatial and temporal resolution will be established. Feasibility will be established by demonstrating that a good thermal image of an illuminated high temperature target can be obtained. Imaging access to turbomachinery and combustors in during normal operation or even simple installation in a test rig would be an important advance in aircraft engine diagnosis. A prototype endoscope will be designed, fabricated, and tested in Phase 2.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Thoughtventions Unlimited	Lead Organization	Industry	Glastonbury, Connecticut
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio



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Primary U.S. Work Locations	
Connecticut	Ohio

Project Transitions

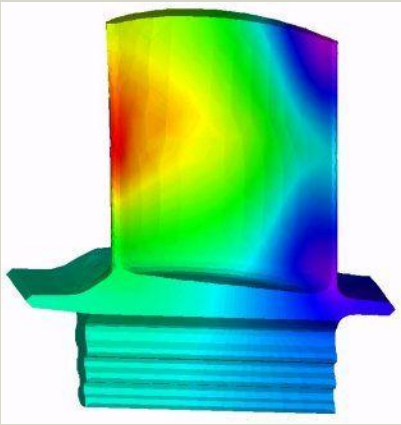
June 2014: Project Start

December 2014: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140518)*

Images



Briefing Chart
High Temperature Fiberoptic Thermal Imaging System, Phase I *(https://techport.nasa.gov/image/128795)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Thoughtventions Unlimited

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Stephen C Bates

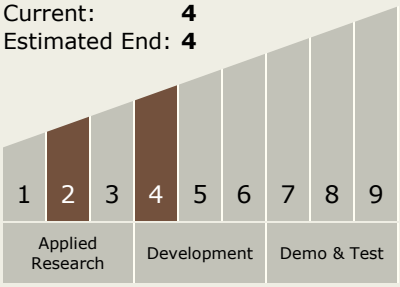
Co-Investigator:
Stephen Bates

High Temperature Fiberoptic Thermal Imaging System, Phase I

Completed Technology Project (2014 - 2014)

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System